



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/827,323

04/20/2004

Manabu Saito

113539.01

4040

25944 7590 10/29/2008

OLIFF & BERRIDGE, PLC

P.O. BOX 320850

ALEXANDRIA, VA 22320-4850

EXAMINER

GRAINGER, QUANA MASHELL

ART UNIT

PAPER NUMBER

2852

MAIL DATE

DELIVERY MODE

10/29/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/827,323	<b>Applicant(s)</b> SAITO ET AL.	
	<b>Examiner</b> Quana M. Grainger	<b>Art Unit</b> 2852	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 September 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21,23-29 and 31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21,23-29 and 31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 17-20, 29, and 31 are rejected under 35 U.S.C. 102(b) as being anticipated by Yano (cited by applicant, JP07-168507A).

Yano teach a process cartridge comprising an image carrying body; at least one process unit; and a developer replenishment box, wherein the developer replenishment box is communicatively connected to a developing housing; and wherein the developer replenishment box is disposed in an upper position than a latent image writing position on the image carrying body (Yano, figures 4-5).

Yano teaches an image forming apparatus comprising: a latent image forming unit that forms a latent image on an image carrying body; and a developing unit that visualizes the latent image formed on the image carrying body by using a developer, wherein a developing housing containing the developer is communicatively connected to a developer replenishment box; and wherein the developer replenishment box is disposed in an upstream of a latent image writing position on the image carrying body, and an upper portion of the developer replenishment box is substantially higher than an upper portion of the image carrying body, and a waste developer recovering box integrally attached to the developer replenishment box. The image forming apparatus further comprising a process cartridge detachably attached to the apparatus body, the

Art Unit: 2852

process cartridge into which the image carrying body and at least one process unit are incorporated, wherein the process cartridge includes the developer replenishment box. The developer replenishment box is detachably attached to the process cartridge. The image carrying body cartridge including at least the image carrying body is detachably attached to the process cartridge.

Yano teaches a process cartridge comprising: an image carrying body; at least one process unit; and a developer replenishment box, wherein the developer replenishment box is communicatively connected to a developing housing; and wherein the developer replenishment box is disposed in an upper position than vertically above a latent image writing position on the image carrying body. The developing housing is disposed in a lower part of the latent image writing position.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

Art Unit: 2852

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-6, 9-16, and 23-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yano in view of Kimura et al. (JP11-193164A).

Yano teaches an image forming apparatus comprising: an image forming section having a developer storage space 25, 28 into which developer is stored; and an ejection unit that ejects therefrom a recording medium on which an image has been formed by the image forming section, and a second developer storage portion 25 arranged at a lower portion thereof, while sandwiching therebetween a horizontal line which is extended from a latent image forming position of the image carrier by the optical writing apparatus along a horizontal direction, and the first developer storage portion is connected to the second developer storage portion (abstract).

Yano teaches an image forming apparatus comprising: an image forming section having a developer storage space into which developer is stored; and an ejection unit that ejects therefrom a recording medium on which an image is formed by the image forming section, the developer storage space owns a first developer storage portion arranged at an upper portion thereof, and a second developer storage portion arranged at a lower portion thereof, while sandwiching therebetween a horizontal line which is extended from a latent image forming position of the image carrier by the optical writing apparatus along a horizontal direction, and the first developer storage portion is connected to the second developer storage portion (abstract; figures 1,4-5, & 7). The image forming section includes an image carrier, an optical writing apparatus for forming a latent image on the image carrier, and a developing apparatus containing the developer

Art Unit: 2852

storage space, for developing the latent image of the image carrier so as to produce a visible image (figure 1). The developer storage capacity of the first developer storage portion 25 is larger than that of the second developer storage portion 28. The optical writing apparatus is constituted by a laser exposing apparatus 27, and is arranged at a position which is extended from the latent image forming position of the image carrier to the horizontal direction.

The image forming section includes a process cartridge which includes an image carrier on which a latent image is formed, and a developing unit containing the developer storage, for developing the latent image of the image carrier so as to produce a visible image. The grip portion is provided on the wall surface which surrounds the developer storage space and the grip portion is formed in such a manner that the grip portion is entered into an inner side of a wall surface of the grip portion (the process cartridge is grip-able by the installer). The flow path that causes air to pass therethrough is formed between the ejection portion and the wall surface. The flow path is constructed of a rib which is formed on at least one of the ejection unit and the wall surface. The image forming apparatus rib is formed along an ejection direction of the recording medium which is ejected to the ejection unit.

Yano teaches a process cartridge used in an image forming apparatus containing an ejection unit, a developer storage space that stores therein developer, and also, the developer storage space owns a first developer storage portion arranged at an upper portion thereof, and a second developer storage portion arranged at a lower portion thereof, while sandwiching therebetween a horizontal line which is extended from a latent image forming position of the image carrier by the optical writing apparatus along a horizontal direction, and the first developer storage portion is connected to the second developer storage portion. A process cartridge 24

Art Unit: 2852

used in an image forming apparatus containing wherein the developer storage space owns a first developer storage portion arranged at an upper portion thereof, and a second developer storage portion arranged at a lower portion thereof, while sandwiching therebetween a horizontal line which is extended from a latent image forming position of the image carrier by the optical writing apparatus along a horizontal direction, and the first developer storage portion is connected to the second developer storage portion (figure 1 or 4). The recording sheet onto which a visual image is transferred from the image carrying body is transported from a lower part to an upper part; and wherein the developer replenishment box is disposed on an upper side of the latent image writing position on the image carrying body. The image forming apparatus further comprising a discharge tray for accommodating discharged sheets, disposed in an upper part of the developer replenishment box. The upper surface housing of the developer replenishment box is an inclined surface inclined in the same direction as of the discharge tray accommodating the recording sheets. The developer replenishment box is capable of containing a larger amount of developer than the developing housing disposed in a lower side of the latent image writing position on the image carrying body.

The developer replenishment box is disposed in an upper part of a latent image writing position on the image carrying body; wherein the developing housing is disposed in a lower part of the latent image writing position; and wherein the developer replenishment box is communicatively connected to the developing housing by way of a communicative passage, which makes a detour around the latent image writing position.

Yano teaches an image forming apparatus comprising: a latent image forming unit that forms a latent image on an image carrying body; a developing unit that visualizes the latent

Art Unit: 2852

image formed on the image carrying body by using a developer; and the image carrying body temporarily holds the visual image formed on the image carrying body and transferring the visual image onto a recording sheet, wherein the recording sheet is transported from a lower part to an upper part; wherein a developing housing containing the developer is communicatively connected to a developer replenishment box; and wherein the developing housing and the developer replenishment box are disposed in an upper part of a latent image writing position on the image carrying body.

Yano does not teach wherein the ejection unit owns an inclination portion which has a lower end and an upper end, while being obliquely formed, at least a portion of the developer storage space of the image forming section is arranged in an area which is surrounded by the inclination portion, a horizontal plane extended from the lower end of the inclination portion, and a vertical plane extended from the upper end of the inclination portion, the developer storage space owns a first developer storage portion arranged at an upper portion thereof.

Kimura teaches an ejection unit owns an inclination portion which has a lower end and an upper end, while being obliquely formed, at least a portion of the developer storage space of the image forming section is arranged in an area which is surrounded by the inclination portion, a horizontal plane extended from the lower end of the inclination portion, and a vertical plane extended from the upper end of the inclination portion, the developer storage space owns a first developer storage portion arranged at an upper portion thereof. The inclination portion of the ejection unit has the lower end in the vicinity of an exit port from which the recording medium is ejected, and is heightened toward the upper end of the inclination portion.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the teaching of Kimura with the image forming apparatus of Yano to miniaturize the image forming device by placing the process cartridge in a part of the space formed by an incline discharge tray.

6. Claims 7 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yano in view of Kimura et al. (JP11-193164A) and further in view of Sawada (5,631,726).

Yano does not teach that the inclination portion can be freely opened/closed, and the process cartridge can be detachably mounted via an opening portion which is formed when the inclination portion is opened.

Sawada teaches an image forming apparatus wherein the process cartridge is attached to and detached from the apparatus body by opening an opening/closing cover provided in an upper part of the apparatus body.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the teaching of Sawada with the image forming apparatus of Yano to easily remove and replace a process cartridge from an image forming apparatus (Sawada, figure 3, column 3, lines 3- 32).

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yano in view of Kimura et al. (JP11-193164A) and further in view of Yasui et al. (cited by applicant JP10-181978A)

Yano does not teach an image forming apparatus further comprising: a paper supplying apparatus having a supply unit for supplying the recording medium; a fixing apparatus arranged on the downstream side of the transfer apparatus; and wherein a portion of the transport path defined from the supply unit of the paper supply apparatus up to the fixing apparatus is formed along a substantially vertical direction.

Yasui et al. teaches an image forming apparatus further comprising: a paper supplying apparatus having a supply unit for supplying the recording medium; a transfer apparatus provided opposite to the image carrier of the process cartridge; a fixing apparatus arranged on the down-stream side of the transfer apparatus; and a transport path that transports the recording medium supplied from the supply unit of the paper supplying apparatus between the image carrier and the transfer apparatus, and for ejecting the recording medium via the fixing apparatus to the ejection unit, wherein a portion of the transport path defined from the supply unit of the paper supply apparatus up to the fixing apparatus is formed along a substantially vertical direction (abstract; figures 1-2).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the teaching of Yasui with the image forming apparatus of Yano since Yano does not teach the layout for the image forming apparatus that would use a process cartridge utilizing a horizontal latent image forming position.

### ***Response to Arguments***

8. Applicant's arguments filed 9-4-2008 have been fully considered but they are not persuasive.

Applicant argues that with respect to independent claim 17, this claim recites a waste developer recovery box integrally attached to the developer replenishment box. Yano does not teach this feature.

However, Yano teaches a process cartridge with a developing device and cleaning device having a replenishment box. The process cartridge encloses both the developing device and the cleaning device with the replenishment box in an integral casing.

Applicant argues regarding claim 25, Fig. 1 of Yano discloses an upper surface of the housing of the replenishment box 28 that is not inclined. Thus, for these additional reasons, Yano does not anticipate claim 25.

However, the top surface of Yano does teach several inclined portions above the cleaning brush and cleaning brush roller of the replenishment box.

Applicant argues regarding claim 26, Yano does not disclose an amount of developer that the developer replenishment box 28 can contain and an amount of developer that the developing housing 25 can contain.

However, the claims recite that “an amount of developer that the developer replenishment box 28 can contain and an amount of developer that the developing housing 25 can contain ...”. The amount of developer in the replenishment box and the amount of developer in the developer housing change as the process cartridge is used. The new process cartridge of course contains a larger amount of developer in the developer housing than at the lifetime end of the process cartridge where a larger amount of developer would be in the replenishment box of the cleaning device.

The claims remain rejected as discussed above.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

***Contact Information***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quana M. Grainger whose telephone number is 571-272-2135. The examiner can normally be reached on 10am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Gray can be reached on 571-272-2119. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2852

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Quana M Grainger/  
Primary Examiner, Art Unit 2852

QG